ABSTRACT

Apparatus for transferring information within a cellular network, including a base-station transceiver system (BTS) positioned at a first location, and an antenna assembly, positioned at a second location remote from the first location. The BTS includes communication control circuitry which generates down-link radio-frequency (RF) signals and processes up-link RF signals, and first transducer circuitry which modulates a first beam of unguided electromagnetic radiation with the down-link RF signals and demodulates a second beam received from the antenna assembly to recover the up-link signals.

The antenna assembly includes second transducer circuitry which modulates the second beam with the up-link signals, and radiates the modulated beam to the BTS. The second transducer circuitry also demodulates the first beam to recover the down-link signals, and transfers the signals to an antenna, included in the assembly, which radiates the down-link signals.